**DRILLING LOG**

**RUSCOE MOSS COMPANY**

**4306-02**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** 5-1-1987  
**Job No.:** 14-86  
**Hole No.:** 42  
**Elevation:** 276.2 ft.

---

**Customer:** State of Hawaii  
**Location:** Mililani Well Field

---

**Driller:** Jim Riddle  
**Helper:** Brent Bunnells  
**Arv. Job:**  
**Lv. Job:**  
**Or. No.:**

---

**Hrs.**  
**Rig:**

---

**Gas:**  
**Oil:**

---

**Hrs.**  
**Repairs:**

---

**Bit-Size:**

---

**Type:**

---

**Casing-Size:** in., Length in hole ft., Amt. Perforated ft.

---

**Depth Start ft., Depth Stop ft., Feet Drilled**

---

**Water Levels, Time**  
**M ft., Time**  
**M ft.,**

---

**Measurements**

---

**Depth**  
**Formation**

---

**Remarks:**  
Finished loading everything except welder tool box  
With drill rig, welded well cap  
Well tools in rig, down mud  
Drill rig down ready to ship to shipper tool box  
Pickup to ship to Honolulu, returned to Honolulu  
Raining hard all day

---

**Signed:** Jim Riddle  
**Date:** 5-1-1987
Date: 4/30/87  
Job No.: 141-58  
Hole No.: #2  
Elevation: 276.2 ft.

Customer: State of Hawaii  
Location: Wahiawa Cell #3

Driller: Jim Riddle  
8 Hrs.  
Rig: ____________

Helper: Brent Runnels  
8 Hrs.  
Gas: ____________  
Oil: ____________  
Repairs: ____________

Arv. Job: ____________  
Lv. Job: ____________  
Hrs.: ____________  
Or. No.: ____________

Bit-Size: ____________  
Type: ____________

Casing-Size: ____________ in., Length in hole: ____________ ft.  
in., Amt. Perforated ____________ ft. ____________ in.

Depth Start: ____________ ft., Depth Stop: ____________ ft., Feet Drilled: ____________

Water Levels, Time: ____________ M ft., Time: ____________ M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>bailed oil off top of water with one section of dummy, loaded up dummy &amp; 24&quot; conductor pipe &amp; discharge pipe tools to pit, started loading stone &amp; fuel box &amp; welder cleaned &amp; turned apartment back shipped trunks things &amp; tv set back to Honolulu (raining most of day)</td>
</tr>
</tbody>
</table>

Signed: Jim Riddle  
Date: 4/30/87  

Remarks: _____________________________________________________________________________________________________________________________________
**DRILLING LOG**

**4306-02**
830 AUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 888-6888 • 833-1444

**Date:** 4-29-1987

**Job No.:** 14-84

**Hole No.:** #2

**Elevation:** 276.2 ft.

**Customer:** State of Hawaii

**Location:** Pahuana Well No.

<table>
<thead>
<tr>
<th>Driller</th>
<th>8 Hrs.</th>
<th>Rig</th>
<th>Helper</th>
<th>8 Hrs.</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jim Riddle</td>
<td></td>
<td></td>
<td>Brent Russell</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Helper:**

**Arv. Job:**

**Lv. Job:**

**Hrs.:**

**Or. No.:**

**Bit-Size:**

**Type:**

**Casing-Size:**

**in., Length in hole:**

**ft.**

**in., Amt. Perforated:**

**ft.**

**in.**

**Depth Start:**

**ft., Depth Stop:**

**ft., Feet Drilled:**

**Water Levels, Time:**

**M. ft., Time:**

**M. ft.**

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Set up video camera, ran down well, repacked put away, ran dummy (went fine) took dummy apart, set up and caged well, start and watch, started repacking everything to ship back to Honolulu (raining hard most of day)</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

**Signed:** Jim Riddle  
**Date:** 4-29-1987
**DRILLING LOG**

**Date:** 4-25-87  
**Job No.:** 14-86  
**Hole No.:** 52  
**Location:** Hilo, Punaia well 73

**Customer:** State of Hawaii  
**Elevation:** 276.2 ft

**Driller:** Jim Riddle  
**Helper:** Brent Russell  
**Helper:**  
**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**  
**Rig:**  
**Gas:**  
**Oil:**  
**Reps:**  
**Hrs.:**  
**Or. No.:**

**Bit-Size:**  
**Type:**

**Casing-Size:** in., Length in hole ft., Length in hole ft., Amt. Perforated ft., Amt. Perforated

**Depth Start:** ft., Depth Stop:** ft., Feet Drilled

**Water Levels, Time:** M ft., Time:** M ft.,

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Flew to Hilo, checked with pier dummy couldn't be picked up until after lunch, drove to Kona picked up cable reel for TV camera returned to Hilo, picked up dummy tools at job site welded on donuts, ran dummy down hole to make sure it would go (rainin hard most of day)</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

**Signed:** Jim Riddle  
**Date:** 4-25-87
### DRILLING LOG

**4306-02**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

---

**Date** 4-24-87  Job No. 14-86  Hole No. A7  Elevation 276.70 ft.

Customer  State of Hawaii  Location Waikiki Pauoa HP

Driller  Jim Riddle  **Hrs.** Rig  
Helper  Brent Reweles  **Hrs.** Gas  Oil

Arv. Job  __________  Lv. Job  __________  **Hrs.** Repairs  Or. No.  

---

**Bit-Size**  
**Type**  
**Casing-Size** in., Length in hole __________ ft. __________ in., Amt. Perforated __________ ft. __________ in.

**Depth Start** __________ ft., Depth Stop __________ ft., Feet Drilled __________

**Water Levels, Time** M __________ ft., Time __________ M __________ ft.  

---

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td></td>
<td>Loading and hauling pump to drilling site to Hil. pier.</td>
</tr>
<tr>
<td>23</td>
<td></td>
<td>Returned to Honolulu</td>
</tr>
</tbody>
</table>

---

**Measurements**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

---

**Remarks:**

---

**Signed** Jim Riddle  **Date** 4-24-87  1987
Date: 4-23 1987  
Job No: 14-86  
Hole No: 43  
Elevation: 276.20 ft.

Customer: State of Hawaii  
Location: Kila, Piihonia Rd.

Driller: Jim Riddle  
Hrs: 9  
Rig:  

Helper: Brent Ramelis  
Hrs: 8  
Gas:  
Oil:  

Helper:  
Hrs:  
Repairs:  

Arv. Job:  
Lv. Job:  
Hrs:  
Or. No:  

Bit-Size:  
Type:  

Casing-Size:  
in., Length in hole:  
ft.  in., Amt. Perforated:  
ft.  in.

Depth Start:  
ft., Depth Stop:  
ft., Feet Drilled:  

Water Levels, Time:  
M.  ft., Time:  
M.  ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Finished breaking down drill string, bailed oil off top of water, skipper things to ship to Honolulu</td>
<td></td>
</tr>
</tbody>
</table>

Measurements

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

Remarks:  

Signed: Jim Riddle  
Date: 4-23 1987
# DRILLING LOG

**RUSCOE MOSS COMPANY**

**4306-02**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6885 • 833-1444

Date: 4-22-1987  
Job No.: 14-86 
Hole No.: 42  
Customer: State of Hawaii  
Location: Wai'alu, Honolulu

<table>
<thead>
<tr>
<th>Driller</th>
<th>Helper</th>
<th>Rig</th>
<th>Gas</th>
<th>Oil</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jim Riddle</td>
<td>Brent Russellis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Hrs.</td>
<td>8 Hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bit-Size**  
**Type**

**Casing-Size**
in, Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start**
ft., Depth Stop ft., Feet Drilled

**Water Levels**  
Time M ft., Time M ft.,

### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>

- Finished pulling pump, 2
- 20 joints made ready to ship, made arrangements with H.T. to load (could not haul till Friday) started breaking down drill string

**Remarks:**

Signed: Jim Riddle  
Date: 4-22-1987
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

Date: 4-21 1987  Job No.: 14-86  Hole No.: F2  Elevation: 276.2 ft.

**Customer:** State of Hawaii  **Location:** Hilo, Pahoa F2

**Driller:** Jim Riddle  **Hrs.:** 8

**Helper:** Brent Rannells  **Hrs.:** 8

**Arv. Job:** ______  **Lv. Job:** ______  **Hrs.:** ______  **Or. No.:** ______

**Bit-Size:** ______  **Type:** ______

**Casing-Size:** ______ in., Length in hole ______ ft.  **in., Amt. Perforated:** ______ ft.  **in.**

**Depth Start:** ______ ft.  **Depth Stop:** ______ ft.  **Feet Drilled:** ______

**Water Levels, Time:** ______ M. ft., Time: ______ M. ft.

---

**Depth** | **Formation** | **Remarks** | **Top**
---|---|---|---

Flown to Hilo, went to job site
Took last engine, gear, drive & discharge head to piers shipped to Honolulu. Returned started pulling pump, pulled 50' joints

---

**Remarks:**

---

**Signed:** Jim Riddle  **Date:** 4-21 1987
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>4-20 1987</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>Hole No.</td>
</tr>
<tr>
<td>Customer</td>
<td>Shop</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>Jim Riddle</th>
<th>8 Hrs.</th>
<th>Rig</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Hal Canton</td>
<td>8 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Helper |  |  |  |  |
| Or. No. |  |  |  |  |

**Bit-Size** ___________ **Type** ___________  
**Casing-Size** ___________ in., **Length in hole** ___________ ft. ___________ in., **Amt. Perforated** ___________ ft. ___________ in.  
**Depth Start** ___________ ft., **Depth Stop** ___________ ft., **Feet Drilled** ___________  
**Water Levels, Time** ___________ M ___________ ft., **Time** ___________ M ___________ ft.  

<table>
<thead>
<tr>
<th>Measurements</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>working in shop putting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>last of things from Kalanui</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>well away, went to Mililani well 57</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>took 2 &amp; drill rig the rest</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>of way down made ready</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>to move, worked on dummy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>our pile job</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**  

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

**Signed** Jim Riddle  
**Date** 4-20 1987
**DRILLING LOG**

Date: April 16 1987  
Job No.: 14-86  
Hole No.: 2  
Elevation: 273.21 ft.  
Location: Piilani, Hilo

**Customer:** DLVNR  
**Driller:** Brent Ronnells  
**Helper:**  
**Helper:**  
**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**  
**Rig:**  
**Hrs.:**  
**Gas:**  
**Hrs.:**  
**Oil:**  
**Hrs.:**  
**Repairs:**  
**Or. No.:**

**Bit-Size:**  
**Type:**

**Casing-Size:** in., Length in hole: ft. in., Amt. Perforated: ft. in.

**Depth Start:** ft., **Depth Stop:** ft., **Feet Drilled:**

**Water Levels:** Time M ft, **Time:** M ft.

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Test Pump 8 Hrs.</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

Signed: Tracy Evwale  
Date: April 16 1987
Date: April 15, 1987  Job No.: 14-86  Hole No.: 2  Elevation: 278.21 ft.

Customer: Plumber  Location: Bithome, HI

Driller: Brent Runnels  8 Hrs.  Rig:

Helper:  Hrs.  Gas:  Oil:

Helper:  Hrs.  Repairs:


Bit-Size:  Type:


Depth Start: ft., Depth Stop: ft., Feet Drilled:

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Test Pump 8 Hrs.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Signed: Tracy Lammers  Date: April 15, 1987
Date: April 14, 1987  
Job No.: 14-86  
Hole No.: 2  
Elevation: 278.2 ft.

Customer: DH+WR  
Location: Pihana, Hi

Driller: Brent Runnels  
Hrs.: 8  
Rig:

Helper:  
Hrs.:

Helper:  
Hrs.:

Arv. Job:  
Lv. Job:  
Hrs.:  
Or. No.:

Bit-Size:  
Type:


Depth Start: ft., Depth Stop: ft., Feet Drilled:

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Test Pump 8 hrs.</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: ____________________________________

Signed: Tracy Runnels  
Date: April 14, 1987
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

---

Date: April 13 1987  |  Job No.: 14-86  |  Hole No.: 2  |  Elevation: 278.21 ft.
Customer: DL+NR  |  Location: Piho (Kona, Hi)

---

<table>
<thead>
<tr>
<th>Driller</th>
<th>Hrs.</th>
<th>Rig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breit Runnels</td>
<td>8</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs.</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Oil</td>
</tr>
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<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs.</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
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<tbody>
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</tbody>
</table>

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<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>in., Length in hole</th>
<th>ft.</th>
<th>in., Amt. Perforated</th>
<th>ft.</th>
<th>in.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft., Depth Stop</th>
<th>ft., Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M ft.</th>
<th>Time</th>
<th>M ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<table>
<thead>
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<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Test Pump 8 hrs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Step Test in AM.</td>
<td></td>
</tr>
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</table>

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**Measurements**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Remarks:

---

Signed: Tracy  |  Date: April 13 1987

---
### Drilling Log

**Date:** April 10, 1987  
**Job No.:** 14-86  
**Hole No.:** 3  
**Elevation:** 276.20 ft.

**Customer:** DE & NR  
**Location:** Piohonu, Hilo

<table>
<thead>
<tr>
<th>Driller</th>
<th>Helper</th>
<th>Rig</th>
<th>Gas</th>
<th>Oil</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracy Runnels</td>
<td>Brent Runnels</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Helper:**  
**Hrs.:**
- Tracy Runnels: 5
- Brent Runnels: 5

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**  
**Or. No.:**

<table>
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<tr>
<th>Bit-Size</th>
<th>Type</th>
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|-------------|-----|----------------|-----|----------------|-----|

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<tr>
<th>Depth Start</th>
<th>ft.</th>
<th>Depth Stop</th>
<th>ft.</th>
<th>Feet Drilled</th>
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<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft.</th>
<th>Time</th>
<th>M</th>
<th>ft.</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fly to Hilo from Hono.</td>
<td>Pull gear drive &amp; drive shaft over haul top flange.</td>
</tr>
<tr>
<td></td>
<td>Adjust ment &amp; reinstallation of shaft.</td>
<td>Surge well &amp; pump with 30 gal. chlorox leave chlorox in well, will pump out Mon. with step test.</td>
</tr>
<tr>
<td></td>
<td>Pick up 6 33-gal. drums of diesel fuel &amp; load.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fly back to Hono.</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**
- Fly to Hilo from Hono.
- Pull gear drive & drive shaft over haul top flange, adjustment & reinstallation of shaft.
- Surge well & pump with 30 gal. chlorox, leave chlorox in well, will pump out Mon. with step test. Pick up 6 33-gal. drums of diesel fuel & load.
- Fly back to Hono.

**Date:** April 10, 1987  
**Signed:** Tracy Runnels
## DRILLING LOG

**Date:** April 3, 1987  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 379.27 ft.

**Customer:** DEWEY  
**Location:** DIAMOND HEAD

**Driller:** Tracy Runnels  
**Rig:**  
**Gas:**  
**Oil:**  
**Helper:** Brent Runnels  
**Hrs.:**  
**Repairs:**

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**  
**Or. No.:**

**Bit-Size:**  
**Type:**  
**Casing-Size:** in., Length in hole ft., Amt. Perforated ft. in.  
**Depth Start:** ft., Depth Stop ft., Feet Drilled  
**Water Levels, Time M ft., Time M ft.**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formations</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Run Pump 6 Hrs. surge every 30 min. till water clear. Surge at 2400 gpm.</td>
<td></td>
</tr>
</tbody>
</table>

**Water Level, Time M:**

**Remarks:**

---

**Signed:** Tracy Runnels  
**Date:** April 3, 1987
Date: April 2, 1987  
Job No.: 14-86  
Hole No.: 2  
Elevation: 273  

Customer:  
Location: Pukana, Hi  

Driller: Tracy Runnels  
Rig:  
Gas:  
Oil:  

Helper:  
Gas:  
Oil:  
Repar:  

Arv. Job:  
Lv. Job:  
Or. No.:  

Bit-Size:  
Type:  

Casing-Size: in., Length in hole ft.  
Amt. Perforated: ft. in.  

Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.  

Adjust top tube and make tension  
Hook up gear drive  
V-12GM engine discharge  
Pipes  
Run pump 1/2 hrs.  
3000 gpm to air gauge  

Signed: Tracy Runnels  
Date: April 2, 1987
DRILLING LOG

RUSCOE MOSS COMPANY

830 ANUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

Date: April 1, 1987

Job No. 14-86

Hole No. 2

Elevation: 278.21 ft.

Customer: SUR

Location: Pohonua, Hi

Driller: Tracy Runnels

Hrs.: 9

Rig: 

Helper: Brent Runnels

Hrs.: 9

Gas: 

Oil: 

Helper: 

Hrs.: 

Repairs: 

Arv. Job: 

Lv. Job: 

Hrs.: Or. No.: 

Bit-Size: 

Type: 

Casing-Size: in., Length in hole ft., Amt. Perforated ft. in.

Depth Start ft., Depth Stop ft., Feet Drilled 

Water Levels, Time M ft., Time M ft.

Remarks: 

Install remaining pump columns in hole at base. Total 264' plus bowls Airline approx. 10lbs psi Tool 4' lift shaft to Machine top to shorten 3 inches

Signed: Tracy Runnels

Date: April 1, 1987
Date: March 31, 1987  
Job No.: 14-86  
Hole No.: 2  
Elevation: 279.21 ft.

Customer: DLTRK  
Location: Pahuwa, Hi

Driller: Tracy Runnels  
Hrs.: 8

Helper: Brent Runnels  
Hrs.: 8

Arv. Job:  
Lv. Job:  
Hrs.:  
Or. No.:  

Bit-Size:  
Type:  

Casing-Size: in., Length in hole: ft.  
Amt. Perforated: ft. in.

Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels: M ft., Time:  
Measurements:  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Install 2 more columns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bowls turning with oil tube</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pull 3 joints &amp; tightened</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bowl reducer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Run 7 20' joints back</td>
</tr>
<tr>
<td></td>
<td></td>
<td>in hole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Airline 2½' above bowls</td>
</tr>
</tbody>
</table>

Remarks:

Signed: Tracy Runnels  
Date: March 31, 1987
**Date**: March 30, 1987  
**Job No.**: 14-96  
**Hole No.**: 2  
**Elevation**: 3775 ft.

**Customer**: DL+MR  
**Location**: Pohana, HI

**Driller**: Tracy Connell  
**Hrs.**: 8  
**Rig**:  
**Gas**:  
**Oil**:  

**Helper**: Brent Connell  
**Hrs.**: 8  
**Gas**:  
**Oil**:  
**Repairs**:  
**Or. No.**:  

**Arv. Job**:  
**Lv. Job**:  
**Hrs.**:  

---

**Bit-Size**  
**Type**

**Casing-Size**  
**in.**, **Length in hole**: **ft.**, **in.**, **Amt. Perforated**: **ft.**, **in.**

**Depth Start**: **ft.**, **Depth Stop**: **ft.**, **Feet Drilled**:  

**Water Levels, Time**: **M.**, **ft.**, **Time**: **M.**, **ft.**

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pickup, Gear Drive, Base, elevators, Engine etc. From Y. Bro.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pickup permatax + turbine oil</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Run Horse + 1, 20'column, 10 inch pump</td>
</tr>
</tbody>
</table>

**Remarks**:  

**Signed**: Tracy Connell  
**Date**: March 30, 1987
### DRILLING LOG

**Date:** March 20, 1987  
**Job No.:** 14-86  
**Hole No.:** 2  
**Location:** Pilowai, Maui

#### Customer: HAWAII R.L. INC

<table>
<thead>
<tr>
<th>Driller</th>
<th>Tracy Kamille</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Bit-Size: 17  
**Type:** Star

#### Casing-Size: in., Length in hole ft. in., Amt. Perforated ft. in.

#### Depth Start ft., Depth Stop ft., Feet Drilled ft.

#### Water Levels, Time M ft., Time M ft.

#### Remarks:

- **438 ft:** Form. Rock  
  - 445 ft: Cinders  
  - 495 ft: Stop drilling 448  
  - Hard layer  
  - Some yellow in cuttings  
  - Water yellow

- Remarks: _______________________________________

#### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B</td>
</tr>
</tbody>
</table>

**Signed:** Tracy Kamille  
**Date:** March 20, 1987
Date: March 19, 1987  
Job No.: 14-86  
Hole No.: 2  
Elevation: 275.2 ft.  
Customer:  
Location: Bikanea, Hilo  

Driller: Tracy Lomella  
8 Hrs.  
Rig:  

Helper:  
Hrs. Gas:  
Oil:  

Helper:  
Hrs. Repairs:  

Arv. Job:  
Lv. Job:  
Hrs. Or. No.:  

Bit Size: 17"  
Type: STAR  

Casing Size:  
in., Length in hole:  
ft., Amt. Perforated:  
in.  

Depth Start:  
ft., Depth Stop:  
ft., Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>429</td>
<td>Porous Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>435</td>
<td>+ red cinders</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:  

Signed: Tracy Lomella  
Date: March 19, 1987
### DRILLING LOG

- **Date:** March 19, 1987
- **Job No.:** 14-86
- **Hole No.:** 2
- **Elevation:** 273.27 ft.

#### Customer

- **Name:** DUHR
- **Location:** Ailona Hill

#### Driller

- **Name:** Tracy Runnels
- **Hrs.:** 8

#### Helper

- **Name:** Brent Runnels
- **Hrs.:** 8

#### Rig

- **Rig:**
- **Gas:**
- **Oil:**

#### Helper

- **Hrs.:**
- **Repairs:**

#### Arv. Job

- **Hrs.:**
- **Lv. Job:**

#### Bit-Size

- **Type:** Star

#### Casing-Size

- **In., Length in hole:**
- **In., Amt. Perforated:**

#### Depth Start

- **Depth Stop:**
- **Feet Drilled:**

#### Water Levels, Time

- **M ft., Time:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>374</td>
<td>Porous Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>405</td>
<td>Large chunks in cuttings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>405</td>
<td>Porous Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>420</td>
<td>Large chunks in cuttings</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Remarks:

- ____________________________

#### Signed

- **Signatures:**
- **Date:** March 18, 1987
### DRILLING LOG

**Date:** March 17, 1987  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 5778.21 ft.

**Customer:** DL & NR  
**Location:** Honolulu, HI

**Driller:** Tracy Lunnells  
**Hrs.:** 8

**Helper:** Brent Lunnells  
**Hrs.:**

**Rig:** 
**Gas:** 
**Oil:**

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**

**Repaired:**

**Or. No.:**

**Bit-Size:** 17"  
**Type:** Star

**Casing-Size:** in, Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start:** ft., Depth Stop ft., Feet Drilled

**Water Levels, Time:** M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>375</td>
<td>Porous rock</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>385</td>
<td>Red Cinders</td>
<td>Muddy red water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>585</td>
<td>Porous Rock</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>390</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>395</td>
<td>Hard layer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

---

**Signed:** Tracy Lunnells  
**Date:** March 17, 1987
**DRILLING LOG**

Date: March 16, 1987  
Job No.: 14-86  
Hole No.: 2  
Elevation: 278.2 ft.

Customer: DL + DK  
Location: Dikona, HI

Driller: Tracy Lunnells  
8 Hrs.  
Rig: 

Helper: Bruce Lunnells  
8 Hrs.  
Gas:  
Oil:

Helper:  
Hrs.  
Repairs: 

Arv. Job:  
Lv. Job:  
Hrs.  
Or. No.: 

Bit-Size: 17  
Type: Star


Depth Start: ft., Depth Stop: ft., Feet Drilled: 

Water Levels, Time: 7:30A.M. 39.5 ft., Time: M ft. 

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>365</td>
<td>Porous Rock +</td>
<td></td>
<td></td>
</tr>
<tr>
<td>375</td>
<td>Red Cinders</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Muddy red water</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: 

Signed: Tracy Lunnells  
Date: March 16, 1987
**RUSCOE MOSS COMPANY**

---

**DRILLING LOG**

---

Date: March 13, 1987  
Job No.: 14-86  
Hole No.: 3  
Elevation: 278.21 ft.

Customer: DL+WR

Location: Piihonua, Hilo

Driller: Tracy Runnells  
8 Hrs.  
Rig: 

Helper: Brent Runnells  
8 Hrs.  
Gas:  
Oil: 

Arv. Job:  
Lv. Job:  
Hrs. Repairs:  
Or. No.:

Bit-Size: 17"  
Type: Star


Depth Start: ft., Depth Stop: ft., Feet Drilled: 

Water Levels, Time: 7:30 AM +39 ft., Time: M ft.

**Depth** | **Formation** | **Remarks** | **Top**
---|---|---|---
347 | Medium Hard | Water dropped overnight |
346 | Rock some porous chunks |
348 | Red cinder |
355 | porous rock |

Remarks:

Signed: Tracy Runnells  
Date: March 13, 1987
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** March 12, 1987  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 218.21 ft.

**Customer:** DL+MR  
**Location:** Piikona, Hi

**Driller:** Tracy Runnels  
**Hrs.:** 8  
**Rig:**

**Helper:** Brent Runnels  
**Hrs.:** 8  
**Gas:**

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**

**Remark:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
</tr>
</thead>
<tbody>
<tr>
<td>357</td>
<td>Cement plug</td>
</tr>
<tr>
<td>319</td>
<td>in pipe</td>
</tr>
<tr>
<td>319</td>
<td>Gray rock lots</td>
</tr>
<tr>
<td>330</td>
<td>of olivine</td>
</tr>
<tr>
<td>330</td>
<td>Argus rock + red cinders</td>
</tr>
<tr>
<td>340</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

- Repair bailer flap on 12" bailer
- Water drooping with each
- Bailing, don't think hole
- Making water till 330' on
- Will sound tomorrow

**Signed:** Tracy Runnels  
**Date:** March 12, 1987
**Date:** March 11, 1987  
**Job No.:** 14-96  
**Hole No.:** 2  
**Elevation:** 273.21 ft.

**Customer:** DLNR  
**Location:** Wahiawa, HI

**Driller:** Tracy Runnels  
**Helper:** Brecht Runnels  
**Rig:**  
**Gas:**  
**Oil:**

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**

**Helper:**  
**Hrs.:**

**Reps.**  
**Or. No.:**

**Bit-Size:**  
**Type:**

**Casing-Size:** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start:** ft., Depth Stop ft., Feet Drilled

**Water Levels, Time:** M ft., Time M ft.

**Remarks:**

---

**Depth** | **Formation** | **Remarks**
--- | --- | ---
| | | Install 45' 1/2" galv. pipe down annulus. Glover delivered 7 yds. 1/4 grout + tremmel down. Placed 7/8" from ground. Left 26' pipe. 24" conductor pipe in ground. Load & ship 20' length 18" pipe. 24" bit + 1/4" bailer. 455 lbs. Stuffed grout pipes in 18 pipe.

**Signed:** Tracy Runnels  
**Date:** March 11, 1987
**Date**: March 10, 1987  
**Job No.**: 14-87  
**Hole No.**: 2  
**Elevation**: 218.21 ft.

**Customer**: CL+NR

**Driller**: Tracy Runnels  
**Helper**: Brent Runnels

**Location**: Piihonua, HI

**Rig**:  
**Gas**:  
**Oil**:  
**Repairs**:  
**Arv. Job**:  
**Lv. Job**:  
**Hrs.**:  
**Or. No.**:  

**Bit-Size**  
**Type**  
**Casing-Size**  
**in., Length in hole**:  
**ft.**  
**in., Amt. Perforated**:  
**ft.**  

**Depth Start**:  
**ft., Depth Stop**:  
**ft., Feet Drilled**:  

**Water Levels, Time**:  
**M. ft., Time**:  
**M. ft.**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
</table>
|       |           | Install 84' 1/2" galv. pipe down annulas, Glovecrusher delivered 9 yards 1+1 grout & tremieled water rising in annulas filled to 63'  
load & ship cement mixers  
& pump to Bros. |

**Remarks**:  

Signed: Tracy Runnels  
**Date**: March 10, 1987
Date: March 9, 1987
Job No.: 14-86
Customer: DL&N
Location: Piilonoa, Hi

Driller: Tracy Runnels
8 Hrs.

Helper: Brent Runnels
8 Hrs.

Arv. Job: __________________________
Lv. Job: __________________________

Bit-Size: __________________________
Type: __________________________


Depth Start: ft., Depth Stop: ft., Feet Drilled: 

Water Levels, Time: M ft., Time: M ft.

Remarks:

Mix + Tremel 160 bags
Meat cement slurry
+ tremel down quinlas
Bottom of tremel pipes
168' at start
6 gal. water to each bag cement
Pull pipes & return
compressor at end of day
Annulas filled to 93 ft.
From ground

Signed: Tracy Runnels
Date: March 9, 1987
**DRILLING LOG**

RUSCOE MOSS COMPANY

---

Date: March 6, 1987  
Job No.: 14-86  
Hole No.: 2  
Elevation: 278.21 ft.

Customer: DL+WR  
Location: Pihonua, Hilo

Driller: Tracy Runnels  
Helper: Brent Runnels  
Helper: John Hole

---

<table>
<thead>
<tr>
<th>Driller</th>
<th>Rig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracy Runnels</td>
<td>Rig</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brent Runnels</td>
<td>Gas</td>
<td>Oil</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Hole</td>
<td>Repairs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Arv. Job</th>
<th>Lv. Job</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No. 20</td>
<td>Job No. 20</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>in., Length in hole</th>
<th>ft.</th>
<th>in., Amt. Perforated</th>
<th>ft.</th>
<th>in.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft., Depth Stop</th>
<th>ft., Feet Drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft., Time</th>
<th>M</th>
<th>ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Measurements**

- **A**
- **B**

---

**Depth**  
**Formation**  
**Remarks**

- Mix and Pump 120 bags cement down annulus filled to 170 ft.

- Pump broke after 80 bags, tremed 40 bags without pump

---

Remarks:

---

Signed: Tracy Runnels  
Date: March 6, 1987
Date: March 5, 1987  
Job No.: 14-86  
Hole No.: 2  
Elevation: 2182 ft.  

Customer: DLNR  
Location: Piihonua, Hi

Driller: Tracy Runnells  
Helper: Brent Runnells  
Helper: John Mole

<table>
<thead>
<tr>
<th>Arv. Job</th>
<th>Lv. Job</th>
<th>Hrs.</th>
<th>Rig</th>
<th>Gas</th>
<th>Oil</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Bit-Size  
Type


Depth Start: ft., Depth Stop: ft., Feet Drilled: ft.

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mix &amp; pump 160 bags cement down hole.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pick up 50 bag cement from Hawaiian Cement for next day.</td>
</tr>
</tbody>
</table>

Signed: Tracy Runnells  
Date: March 5, 1987
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 339-6888 • 833-1444

---

**Date:** March 4, 1987  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 278.21 ft.

**Customer:** DL-NR  
**Location:** Piikuna, Hilo

**Driller:** Tracy Runnels  
**Hrs.:** 8

**Helper:** Brigt Runnels  
**Hrs.:** 8

**Rig:**  
**Gas:**  
**Oil:**  
**Repairs:**

---

**Arv. Job**  
**Lv. Job**  
**Hrs.**  
**Or. No.:**

---

**Bit-Size**  
**Type**

**Casing-Size**  
in., **Length in hole** ft., **Amt. Perforated** ft., **in.**

**Depth Start**  
ft., **Depth Stop**  
ft., **Feet Drilled**

**Water Levels, Time**  
M ft., **Time**  
M ft.

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Pick up grout pump</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Mixing tanks at Young Bros.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Unload at job site.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Run 20ft. more 1inch pipe down Annulas.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total grout pipe length 294 ft.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Rent truck from Harper.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Air Pup 120 bags cement.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>From Hawaiian Cement.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Make arrangements for Compressor from Fair Contract.</strong></td>
</tr>
</tbody>
</table>

---

**Measurments**  

---

**A**  
**B**

---

**Remarks:**

---

**Signed:** Tracy Runnels  
**Date:** March 4, 1987
## Drilling Log

**Customer:** DLNRA DIV. OF WATER & LAND DEVELOPMENT  
**Location:** Puhonua, Hi  
**Date:** Feb 25 1987  
**Job No.:** 14-66  
**Hole No.:** 2  
**Elevation:** 278.21 ft.

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Hrs.</th>
<th>Rig</th>
<th>Gas</th>
<th>Oil</th>
<th>Repairs</th>
<th>Or. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driller</td>
<td>Tracy Runnels</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Brent Runnels</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**
- Run 14 21’ lengths of 1” galv. pipe down liner of hole 295
- Make arrangements for air compressor

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
</table>

**Signed:** Tracy Runnels  
**Date:** Feb 25 1987
Date: Feb 24, 1987  Job No.: 14-86  Hole No.: 2  Elevation: 2782.21 ft.
Customer: DLINR  Location: Piihonua, HI 10

Driller: Tracy Runnels  Hrs.: 8  Rig:
Helper: Brent Runnels  Hrs.: 8  Gas:  
Helper:  Hrs.:  Repairs: 

Bit-Size  Type
Depth Start:  ft., Depth Stop:  ft., Feet Drilled:  
Water Levels, Time:  M  ft., Time:  M  ft.  

Depth  Formation  Remarks  Top

Run 105' 1/2'' galv pipe down liner of hole it won't go any farther
Pick up 13 21' pieces of 1 1/4 galv pipe ran to 105' and stopped
Pour cement plug in bottom of hole 4 bags of cement
How many feet inside casing pick up casing and set back into cement

Remarks:

Signed: Tracy Runnels  Date: Feb 24, 1987
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** Feb 23 1987  
**Job No.:** 14-86  
**Hole No.:** 2 
**Location:** Piikonauta, Hi

**Driller:** Tracy Runnells  
**Helper:** Brent Runnells  
**Arv. Job:**  
**Lv. Job:** 

<table>
<thead>
<tr>
<th>Hrs.</th>
<th>Rig</th>
<th>Hrs.</th>
<th>Gas</th>
<th>Hrs.</th>
<th>Oil</th>
<th>Hrs.</th>
<th>Repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bit-Size:**  
**Type:**  

**Casing-Size:** in., Length in hole ft., in., Amt. Perforated ft., in. 

**Depth Start:** ft., Depth Stop ft., Feet Drilled ft. 

**Water Levels, Time:** M ft., Time M ft. 

---

**Depth** | **Formation** | **Remarks** | **Top**
---|---|---|---

**Top A**  
Weld 5 more lengths of 18" casing in hole

3/8" 9 3/8" 18 in ID  
5/16 wall steel casing  
in hole

Bottom of casing Elev. -40'

Hold casing 5 ft off bottom  
bail hole out & lower casing to bottom

Gage hole with drill bit  
for straightness

---

**Remarks:**

---

**Signed:** Tracy Runnells  
**Date:** Feb 23 1987
**DRILLING LOG**

Date: Feb 20, 1987  
Job No.: 14-86  
Hole No.: 3  
Elevation: 278.21 ft.

<table>
<thead>
<tr>
<th>Customer</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>DL&amp;NR</td>
<td>Piikuna, HI</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Driller</th>
<th>8 Hrs.</th>
<th>Rig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracy Runnels</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>8 Hrs.</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brent Runnels</td>
<td></td>
<td>Oil</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helper</th>
<th>Hrs.</th>
<th>Repairs</th>
</tr>
</thead>
</table>

|----------|---------|------|

<table>
<thead>
<tr>
<th>Bit-Size</th>
<th>Type</th>
<th>Casing-Size in., Length in hole ft., Amt. Perforated ft.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth Start ft., Depth Stop ft., Feet Drilled</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time M ft., Time M ft.</th>
<th>Measurements</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formotion</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Take 24&quot; bit off</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weld 11, 20' lengths of pipe in hole</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18&quot; ID 3/16 wall steel</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Steel spike on bottom of casing</td>
</tr>
</tbody>
</table>

Remarks: 

Signed: Tracy Runnels  
Date: Feb 20, 1987
DRILLING LOG

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

Date: Feb 19 1987  Job No.: 14-86  Hole No.: 2  Elevation: 273.21 ft.

Customer: DL & R  Location: Piiholo, Hi

Driller: Tracy Runnels 8 Hrs.  Rig: 

Helper: Brent Runnels 8 Hrs.  Gas:    Oil: 

Helper:  

Arv. Job:  

Hr.  

Lv. Job:  

Hr.  Or. No.: 

Bit-Size: 24"  Type: Star


Depth Start: ft., Depth Stop: ft., Feet Drilled: 

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Team hole to Straighten</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hot hauled 18'1&quot; casing to job site from their yard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 loads unload after lift</td>
</tr>
</tbody>
</table>

Remarks:

Signed: Tracy Runnels  Date: Feb 19 1987
**DRILLING LOG**

---

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** Feb 18 1987  
**Job No.:** 14-76  
**Hole No.:** 2  
**Elevation:** 273.2 ft.

**Customer:** DL+NR  
**Location:** Pihonua, Hilo

**Driller:** Tracy Runnels  
**Helper:** Brett Runnels  
**Rig:** 
**Gas:** 
**Oil:** 
**Hours:** 8

**Arv. Job:** 
**Lv. Job:** 
**Hrs. Repairs:**

---

**Bit-Size:** 24"  
**Type:** Star

---

**Casing-Size:** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start:** ft., **Depth Stop:** ft., **Feet Drilled:**

---

**Water Levels, Time M ft., Time M ft.**

---

**Depth** | **Formation** | **Remarks** | **Top** | **Measurements**
---|---|---|---|---

---

**Remarks:**

---

**Signed:** Tracy Runnels  
**Date:** Feb 18 1987
<table>
<thead>
<tr>
<th>Date</th>
<th>Feb 17 1987</th>
<th>Job No.</th>
<th>14-86</th>
<th>Hole No.</th>
<th>2</th>
<th>Elevation</th>
<th>278.2 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>MUR</td>
<td>Location</td>
<td>Piikona, Hilo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Tracey Runnels</td>
<td>8 Hrs.</td>
<td>Rig</td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Brent Runnels</td>
<td>8 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td>Lv. Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>24&quot;</td>
<td>Type</td>
<td>Stav</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>in. Length in hole</td>
<td>ft. in., Amt. Perforated</td>
<td>ft. in.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>ft. Depth Stop</td>
<td>ft. ft. Feet Drilled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>930 AM 79.9&quot; ft., Time</td>
<td>M ft.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>381</td>
<td>Ream hole to 3/8&quot;</td>
</tr>
<tr>
<td></td>
<td>Poor rope socket</td>
</tr>
<tr>
<td></td>
<td>Ream hole to straighten</td>
</tr>
<tr>
<td></td>
<td>in a few spots</td>
</tr>
</tbody>
</table>

Signed: Tracy Runnels
Date: Feb 17 1987
## Drilling Log

**RUSCOE MOSS COMPANY**

**4306-02**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6888 • 833-1444

---

**Date**  Feb 13 1987  **Job No.**  14-87  **Hole No.**  2  **Elevation**  278.2 ft.

**Customer**  DL + NK  **Location**  Piihau, Hilo

**Driller**  Tracy Runnels  8 Hrs.  **Rig**

**Helper**  Brent Runnels  8 Hrs.  **Gas**

**Helper**  **Oil**

**Arv. Job**  **Lv. Job**  **Hrs.**  **Or. No.**

---

**Bit-Size**  24"  **Type**  Stav

**Casing-Size**  in., Length in hole ft.  in., Amt. Perforated ft.  in.

**Depth Start**  ft., Depth Stop ft., Feet Drilled

**Water Levels, Time**  M ft., Time  M ft.

---

**Depth**  **Formation**  **Remarks**  **Top**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ream 300-315 24&quot; well filled with cuttings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Formation very abrasive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Leave mud in hole</td>
</tr>
</tbody>
</table>

**Remarks:**

---

**Signed**  Tracy Runnels  **Date**  Feb 13 1987
<table>
<thead>
<tr>
<th>Date</th>
<th>Feb. 12 1987</th>
<th>Job No.</th>
<th>14-86</th>
<th>Location</th>
<th>Pinhona Hill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td>Tracy Runnels</td>
<td>Driller</td>
<td>Tracy Runnels</td>
<td>Helper</td>
<td>Brent Runnels</td>
</tr>
<tr>
<td>Hrs.</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rig</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lv. Job</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Or. No.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Bit-Size 20" Type Star

Casing-Size  in., Length in hole ft. in., Amt. Perforated ft. in.

Depth Start ft., Depth Stop ft., Feet Drilled

Water Levels, Time M ft., Time M ft.

Remarks: Clean hole out 270°-319° with 20" bit changing back to 8" bit in 7:30 A.M.
Ream 270°-300° 2:41"
**Date:** Feb 11 87  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 278.21 ft.

**Customer:**  
**Location:** Pidonia, Hi

**Driller:** Tracy Lynelle  
**Hrs.:** 8  
**Rig:**  

**Helper:** Brent Lynelle  
**Hrs.:** 8  
**Gas:**  

**Helper:**  
**Hrs.:**  
**Oil:**  

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**  
**Repairs:**  
**Or. No.:**

**Bit-Size:** 24"  
**Type:** Stev

**Casing-Size:** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start:** ft.  
**Depth Stopp:** ft.  
**Feet Drilled:**

**Water Levels, Time:**  
**230A M:** 82.2 ft.  
**Time:** M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Revill 260-270'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change bits to 20'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drill to 280' with 20' bits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>hard to get mud started</td>
</tr>
</tbody>
</table>

**Remarks:**

**Signed:** Tracy Lynelle  
**Date:** Feb 11 1987
<table>
<thead>
<tr>
<th>Date</th>
<th>Feb. 10 1987</th>
<th>Job No.</th>
<th>14-86</th>
<th>Hole No.</th>
<th>2</th>
<th>Elevation</th>
<th>278 ( ft. )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>DL+NR</td>
<td>Location</td>
<td>Pihonu) Hilo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driller</td>
<td>Tracy Runnels</td>
<td>8 Hrs.</td>
<td>Rig</td>
<td>Gas</td>
<td>Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helper</td>
<td>Brecht Runnels</td>
<td>8 Hrs.</td>
<td>Helper</td>
<td>Hrs.</td>
<td>Repairs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bit-Size</td>
<td>24 (^\circ)</td>
<td>Type</td>
<td>Star</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing-Size</td>
<td>in., Length</td>
<td>ft.</td>
<td>in., Amt. Perforated</td>
<td>ft.</td>
<td>in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth Start</td>
<td>ft., Depth</td>
<td>ft.</td>
<td>Feet Drilled</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Levels, Time</td>
<td>2304 M</td>
<td>8 ( ft. )</td>
<td>Time</td>
<td>M</td>
<td>ft.</td>
<td>Measurements</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ream</td>
<td>KO-250</td>
<td>260</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hole filled to</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>spend some time reaming</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>bad spots at $135^\circ + 60^\circ$</td>
<td></td>
</tr>
</tbody>
</table>

Remarks: 

Signed: Tracy Runnels | Date: Feb. 10 1987
# Drilling Log

**Ruscoe Moss Company**

830 Ahua Street • Honolulu, Hawaii 96819

**Telephone:** (808) 839-8888 • (832-1444)

**Date:** Feb 9, 1987

**Job No.:** 14-86

**Hole No.:** 2

**Elevation:** 278.2 ft.

**Location:** Pilihau, Hole

---

**Customer:** A & N

**Driller:** Tracy Lynelle

**Helper:** Brent Runnels

**Rig:**

**Gas:**

**Oil:**

**Hrs.**

**Hrs.**

**Hrs.**

**Or. No.:**

---

**Bit-Size:** 2 4 1/2

**Type:** Star

**Casing-Size:**


**Depth Start:**

ft., Depth Stop ft., Feet Drilled

---

**Water Levels, Time:** 7:30 AM 81 ft., Time

**M ft.**

---

**Depth**

<table>
<thead>
<tr>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bear</td>
<td>Beem Hole 24”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60-160</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change bits in A.M.</td>
<td></td>
</tr>
</tbody>
</table>

**Measurments**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

---

**Remarks:**

---

**Signed:** Tracy Lynelle

**Date:** Feb 9, 1987
### DRILLING LOG

**Date:** Jan 30, 1987  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 278.21 ft.

**Customer:** Dr. NR  
**Location:** Bokuwa, HI

<table>
<thead>
<tr>
<th>Driller</th>
<th>Tracy Lumelle</th>
<th>8 Hrs.</th>
<th>Rig</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Hal Fenton</td>
<td>8 Hrs.</td>
<td>Gas</td>
<td>Oil</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td></td>
<td>Hrs.</td>
<td>Repairs</td>
</tr>
<tr>
<td>Lv. Job.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Bit-Size:** 2  
**Type:** Star

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>in., Length in hole</th>
<th>ft.</th>
<th>in., Amt. Perforated</th>
<th>ft.</th>
<th>in.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth Start</td>
<td>ft., Depth Stop</td>
<td>ft.</td>
<td>Feet Drilled</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th>M</th>
<th>ft., Time</th>
<th>M</th>
<th>ft.</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
</tbody>
</table>

### Depth (ft.)  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>272</td>
<td>Hard Blue</td>
<td></td>
</tr>
<tr>
<td>1275</td>
<td>Rock</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

**Signed:** Tracy Lumelle  
**Date:** Jan 30, 1987
**DRILLING LOG**

---

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** Jan. 29, 1987  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 279.21 ft.

**Customer:** DUKE  
**Location:** Hilo

---

**Driller:** Tracy Linn
**Helper:** Hal Feenton
**Arv. Job:**  
**Lv. Job:**  

---

**Bit-Size:** 20"  
**Casing-Size:** in., Length in hole ft., in., Amt. Perforated ft., in.

---

**Water Levels, Time:** M ft., Time ft., Time M ft.

---

### Depth

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>270</td>
<td>Hard Blue</td>
<td>Weld bit frequently</td>
<td></td>
</tr>
<tr>
<td>273</td>
<td>Rock</td>
<td>Bar of bit much damage</td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:**

---

**Signed:** Tracy Linn  
**Date:** Jan 29, 1987
## DRILLING LOG

**Company:** RUSCOE MOSS COMPANY

**Address:** 830 AHUA STREET • HONOLULU, HAWAII 96819

**Telephone:** (808) 833-6688 • 833-1444

---

**Date:** Jan 28 1987  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 278.21 ft.

**Customer:** DL & UK  
**Location:** Punahou, HI

---

**Driller:** Tracy Runnels  
**Hrs.:** 8

**Helper:** Hal Fenton  
**Hrs.:** 8

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**

---

**Bit-Size:** 20”  
**Type:** Star

---

**Casing-Size:** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start:** ft., Depth Stop ft., Feet Drilled ________

**Water Levels, Time:** 70’ M ft., Time M ft.

---

### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>261</td>
<td>Hard Blue Rock</td>
<td>Poor rope socket</td>
<td></td>
</tr>
<tr>
<td>270</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:**

---

**Signed:** Tracy Runnels  
**Date:** Jan 28 1987
**DRILLING LOG**

RUSCOE MOSS COMPANY

830 ANUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>Jan 27, 1987</th>
<th>Job No.</th>
<th>14-86</th>
<th>Hole No.</th>
<th>3</th>
<th>Elevation</th>
<th>+2782 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Uluru</td>
<td>Location</td>
<td>Mt/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Driller    | Tracy Brunell | 8 Hrs. | Rig   |          |     |            |            |
| Helper     | Hal Cantor    | 8 Hrs. | Gas   | Oil      |     |            |            |
| Helper     |               |        |       | Repairs  |     |            |            |

| Arv. Job   |              |        |       | Lv. Job  |     |            |            |
|            |              |        |       | Hrs.     |     |            |            |

Bit-Size 20” Type Star

<table>
<thead>
<tr>
<th>Casing-Size</th>
<th>in., Length in hole</th>
<th>ft. in., Amt. Perforated</th>
<th>ft. in.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>265 ft., Depth Stop</th>
<th>267 ft., Feet Drilled</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water Levels, Time</th>
<th></th>
<th>M ft</th>
<th></th>
<th>M ft</th>
</tr>
</thead>
</table>

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>265</td>
<td>Hard Blue Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>267</td>
<td>Short porous layer</td>
<td>264-266</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Signed: Tracy Brunell  Date: Jan 27, 1987
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET * HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 * 833-1444

---

**Date:** Jan 26, 1987  **Job No.:** 14-86  **Hole No.:** 2  **Elevation:** 279.2 ft.

**Customer:**  **Location:** Honolulu, Hi.

**Driller:** Tracy Renn  **Hrs.:** 8  **Rig:**

**Helper:** Hal Fenton  **Hrs.:** 8  **Gas:**

**Balancer:**

**Arv. Job:**  **Lv. Job:**

---

**Bit-Size:** 20  **Type:** Star

---

**Casing-Size:**

**in., Length in hole:** ft. in., Amt. Perforated ft. in.

**Depth Start:** ft.  **Depth Stop:** ft., Feet Drilled

**Water Levels, Time:** 70 ft., Time

---

**Measurements**

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>260</td>
<td>Hawk Blue</td>
<td>Weld bit 3 times</td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:**

---

**Signed:** Tracy Renn  **Date:** Jan 26, 1987
### DRILLING LOG

**Date:** Jan 23 1987  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 210 ft.

**Customer:** DL+VR  
**Location:** Pahoa, Hilo

**Driller:** Tracy Runnels  
**Hrs.:** 8  
**Rig:**  
**Gas:**  
**Oil:**

**Helper:** Brodt Runnels  
**Hrs.:** 7  
**Repar:**

**Arv. Job:**  
**Lv. Job:**  
**Or. No.:**

**Bit-Size:** 20"  
**Type:** Star  
**Casing-Size:** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start:** ft.  
**Depth Stop:** ft., Feet Drilled  
**Water Levels, Time:** 70° M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 ft</td>
<td>Hard Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>740 ft</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

---

**Signed:** Tracy Runnels  
**Date:** Jan 23 1987
Date: Jan 22 1987  
Job No.: 14-86  
Hole No.: 2  
Elevation: 270 ft.

Customer: DL + NR  
Location: Pilihaewa Hills

Driller: Tracy Runnels  
8 Hrs. Rig

Helper: Brent Runnels  
8 Hrs. Gas  
Oil

Helper

Arv. Job  
Lv. Job  
Hrs.  
Or. No.

Bit-Size: 20"  
Type: Star

Casing-Size:  in.  
Length in hole: ft.  
Amt. Perforated: ft.  

Depth Start: ft.  
Depth Stop: ft.  
Feet Drilled: 

Water Levels, Time: 70 M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>248</td>
<td>Medium</td>
<td>Hard</td>
</tr>
<tr>
<td>252</td>
<td>Rock</td>
<td></td>
</tr>
</tbody>
</table>

Measurements

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
</table>

Signed: Tracy Runnels  
Date: Jan 22 1987

Remarks:
Date: Jan 21 1987  
Job No.: 14-86 
Location:  
Hole No.: 2  
Elevation: 272.5 ft.  

Customer: DL+HR  

Driller: Tracy Runnels 8 Hrs.  
Helper: Brent Runnels 8 Hrs.  
Arv. Job:  
Lv. Job:  
Rig:  
Gas:  
Oil:  
Repairs:  
Or. No.:  

Bit-Size: 2 1/2"  
Type: STAR  

Casing-Size:  
in., Length in hole:  
ft. in., Amt. Perforated:  
ft. in.  

Depth Start:  
ft., Depth Stop:  
ft., Feet Drilled:  

Water Levels, Time:  
M. ft., Time:  
M. ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>Brown Mud</td>
<td></td>
<td></td>
</tr>
<tr>
<td>245</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>249</td>
<td>Medium Hard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>249</td>
<td>Rock</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:  

Signed: Tracy Runnels  
Date: Jan 21 1987
### DRILLING LOG

**RUSCOE MOSS COMPANY**

830 AHU A STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** Jan 20 1987  **Job No.:** 14-86  **Hole No.:** 2  **Elevation:** 2705 ft.

**Customer:** DL + NR  **Location:** Makaha, HI

<table>
<thead>
<tr>
<th>Driller</th>
<th>Tracy Runnels</th>
<th>Hrs.</th>
<th>Rig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Brent Runnels</td>
<td>Hrs.</td>
<td>Gas</td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td>Hrs.</td>
<td>Repairs</td>
</tr>
</tbody>
</table>

**Bit-Size:** 20"  **Type:** Star

**Casing-Size:** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start:** ft., Depth Stop ft., Feet Drilled

**Water Levels, Time:** 70 M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>217</td>
<td>Brown Mud</td>
<td>Brent removed Ford</td>
<td></td>
</tr>
<tr>
<td>232</td>
<td>short porous</td>
<td>fuel tank float, straps</td>
<td></td>
</tr>
<tr>
<td></td>
<td>layers</td>
<td>it welded bed to frame</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:** ____________________________________________________

---

**Signed:** Tracy Runnels  **Date:** Jan 20 1987
## DRILLING LOG

**Customer:** DL + NR  
**Location:** Pitman Way Hills

### Driller:
- Name: Tracy Runnels
- Hrs: 8
- Rig:
- Gas:
- Oil:
- Repairs:

### Helper:
- Name: Britt Runnels
- Hrs: 8
- Or. No.:

### Arv. Job: 
**Job:** 
**Lv. Job:** 
**Hrs.:**

### Bit-Size:
- Size: 20”
- Type: Star

### Casing-Size:
- Size: in.
- Length in hole: ft. in.
- Amt. Perforated: ft. in.

### Depth:
- Start: ft.
- Stop: ft.
- Feet Drilled: 

### Water Levels:
- Time: M/ft

### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>207</td>
<td>Brown Mud</td>
<td></td>
<td></td>
</tr>
<tr>
<td>217</td>
<td>Short porous</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rock Layers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Remarks:

---

**Signed:** Tracy Runnels  
**Date:** 1/19/87
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>160</td>
<td>Grey siltstone</td>
<td>Hole wants to come back plumb move rig to line up with 135°</td>
<td></td>
<td></td>
</tr>
<tr>
<td>165</td>
<td>rock</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Signed: Tracy Runnels Date: Jan 9 1987
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819  
TELEPHONE (808) 831-6888 • 833-1444

<table>
<thead>
<tr>
<th>Date</th>
<th>Jan 8, 1987</th>
<th>Job No.</th>
<th>14-86</th>
<th>Hole No.</th>
<th>2</th>
<th>Elevation</th>
<th>270+ ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>DEXELR</td>
<td></td>
<td></td>
<td>Location</td>
<td>Aikona, Hilo</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Driller: Tracy Runnels   
Helper: Bret Runnels

Rig: 36 L
Gas: Oil
Reps: 

Arv. Job:  
Lv. Job:  
Hrs. Repairs:  
Or. No.: 

Bit-Size: 204  
Type: Star


Depth Start: ft., Depth Stop: ft., Feet Drilled: 

Water Levels, Time: M ft., Time: M ft., 

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>Yellow, Brown</td>
<td>Poor rope, pocket</td>
</tr>
<tr>
<td>140</td>
<td>Clay with pebbles</td>
<td>+ shift rig</td>
</tr>
</tbody>
</table>

Remarks: ________________________________

<table>
<thead>
<tr>
<th>Depth</th>
<th>Forman</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>B</td>
</tr>
</tbody>
</table>

Signed: Tracy Runnels  
Date: Jan 8, 1987  

**DRILLING LOG**

**RUSCOS MOSS**

COMAPNY

830 AHUA STREET * HONOLULU, HAWAII 96819
TELEPHONE: (808) 833-9888 * 833-1444

Date: Jan 7 1987

Job No: 14-86

Hole No: 2

Elevation: 270 ft.

**Customer:** DL+VR

**Location:** Pauoa, HI

**Driller:** Tracy Runnels

**Helper:** Breff Runnels

**Rig:** MVL

**Hrs.** 8

**Gas:** Oil

**Hrs.** 7

**Reparis:**

**Arv. Job:**

**Lv. Job:**

**Hrs.**

**Or. No.:**

**Bit-Size:** 20 in.

**Type:** STA

**Casing-Size:** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start:** ft., Depth Stop ft., Feet Drilled

**Water Levels, Time:** 70 M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>145</td>
<td>Yellow Brown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>Mud with pebbles</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

Signed: Tracy Runnels

Date: Jan 7 1987
Date: Jan 6 1987  
Job No.: 14-86  
Hole No.: 3  
Elevation: 270 t ft.  

Customer: DLX NR.  
Location: Pahoa, Hi.  

Driller: Tracy 
Drill By: 8 Hrs. Rig: 360 L  

Helper: Bruce  
Runnels: 8 Hrs. Gas:  
Oil:  

Arv. Job:  
Lv. Job:  
Hrs. Repairs:  
Or. No.:  

Bit Size: 20"  
Type: Stkr 

Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>134 ft.</td>
<td>Hard Rock</td>
<td>Hole still leaking out</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>136 ft.</td>
<td></td>
<td>Lobbing off ledge</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:  

Signed: Tracy Runnels  
Date: Jan 6 1987
Date: Jan 5, 1987  Hole No. 2  Location: Makaha, HI


Driller: Tracy Runnels  8 Hrs.  Rig: 36 V
Helper: Brad Runnels  8 Hrs.  Gas:  Oil


Bit-Size: 20"  Type: Star
Depth Start: ft., Depth Stop: ft., Feet Drilled: ___ ft.


Remarks: Hole leading up hill  Weld bit 3 times

Signed: Tracy Runnels  Date: Jan 5, 1987
Date: Jan. 2, 1986  Job No: 14-86  Hole No: 2  Elevation: 2705 ft.

Customer: D. W.  Location: Piihau, Hi

Driller: Tracy Runnells  8 Hrs.  Rig: 
Helper: Brent Runnells  8 Hrs.  Gas: Oil
Helper: 
Arv. Job:  
Lv. Job:  
Hrs.  Repairs: 
Or. No.  

Bit-Size: 20"  Type: Star


Depth Start: ft., Depth Stop: ft., Feet Drilled: 
Water Levels, Time M ft., Time M ft. 

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>Hard Rock</td>
<td>Bit rounding on lugs, build bit 3 times.</td>
<td></td>
</tr>
<tr>
<td>130</td>
<td></td>
<td>Rough out day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hole leading little bit</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Signed: Tracy Runnells  Date: Jan 2, 1986
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** Dec 31 1986  
**Job No.:** LK-86  
**Hole No.:** 3  
**Elevation:** 2707 ft.

**Customer:** DL & WR  
**Location:** Pihana, HI

**Driller:** Tracy Runnels  
8 Hrs.  
Rig:

**Helper:** Brett Runnels  
8 Hrs.  
Gas:  
Oil:

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**

**Helper:**  
**Hrs.:**  
**Reps.:**

**Arv. Job:**  
**Lv. Job:**  
**Hrs.:**  
**Or. No.:**

**Bit-Size:** 20'  
**Type:** Star

**Casing-Size:** in., Length in hole ft., Depth Start ft., Depth Stop ft., Feet Drilled

**Depth Start ft., Depth Stop ft., Feet Drilled:**

**Water Levels, Time:** M ft., Time M ft.

### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/5</td>
<td>Muddy brittle</td>
<td>Install repaired pitman</td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>Rock, much olive arm, in AM &amp; drill</td>
<td>Drilling getting hot so I adjusted walking beam mounts</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

**Signed:** Tracy Runnels  
**Date:** Dec 31 1986
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 833-6156 • 833-1444

---

**Date:** Dec. 30, 1986

**Job No.:** Shop

**Hole No.:** 3

**Location:** [Handwritten]

**Elevation:** 210' ft.

---

**Driller:** Tracy Runnels

**8 Hrs. Rig:**

**Helper:** Brent Runnels

**8 Hrs. Gas:**

**Gas:**

**Oil:**

**Repair:**

---

**Arv. Job:**

**Lv. Job:**

---

**Hrs. Repairs:**

---

**Bit-Size:** 20"

**Type:** Star

---

**Casing-Size:** in., Length in hole

**in., Amt. Perforated:** ft. in.

**Depth Start:** ft., Depth Stop

**ft., Feet Drilled:**

---

**Water Levels, Time:** M ft., Time

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td></td>
<td>Take pitman arm + bushings to welding shop to replace 5&quot; x 5/8 plate w/ 1/2 x 31/4 plate.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Repair pipe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Borrow HT+T fork lift &amp; handling machine pallet. 21 joints of 3&quot; column pipe &amp; load onto HT+T fork lift. Make bill of lading out at 9:45 AM &amp; deliver to HT+T dispatch. Pick up 1 barrel of diesel &amp; repaired pitman arm at end of day.</td>
</tr>
</tbody>
</table>

---

**Remarks:**

---

**Signed:** Tracy Runnels

**Date:** Dec. 30 1986
**DRILLING LOG**

---

**Customer:** DL & NR

**Location:** Pihonua, Hilo

---

**Date:** Dec 27, 1986

**Job No.:** 14-86

**Hole No.:** 2

**Elevation:** 27.5 ft.

---

**Driller:** Tracy Runnels

**Helper:** Brent Runnels

**Arv. Job:** ______________

**Lv. Job:** ______________

**Hrs. Repairs:** ______________

---

**Bit-Size:** 2D

**Type:** Star

**Casing-Size:** ___________ in., Length in hole: ___________ ft., Amt. Perforated ___________ ft., ___________ in.

**Depth Start:** ___________ ft., Depth Stop: ___________ ft., Feet Drilled ___________.

**Water Levels, Time:** ___________ M ft., ___________ ft., ___________ M ft., ___________ ft.

---

**Remarks:**

- 67 ft. Rocks, muddy
- Broke pitman arm
- About 7 pm, pull out of lots of debris
- Rig and clean with diesel

---

**Signed:** Tracy Runnels

**Date:** Dec 29, 1986

---

**Measurements**

<table>
<thead>
<tr>
<th>Depth</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Signed:** Tracy Runnels

**Date:** Dec 29, 1986
**Date:** Dec 19 1986  
**Job No.:** 4306-02  
**Hole No.:** 2  
**Elevation:** 717 ft.

**Customer:** DLNR  
**Location:** Piilasqua, Hill

**Driller:** Tracy Runnels  
**Helper:** Brent Brown  
**Rig:**  
**Gas:**  
**Oil:**  
**Hrs. Repairs:**  
**Arv. Job:**  
**Lv. Job:**  
**Hrs:**  
**Or. No.:**

**Bit-Size:** 20"  
**Casing-Size:** in., Length in hole ft., Amt. Perforated ft. in.  
**Depth Start:** ft., Depth Stop ft., Feet Drilled  
**Water Levels, Time:** M ft., Time M ft.

**Depth** | **Formation** | **Remarks** | **Top**
---|---|---|---
1737 | Mud & Poro. | | 
1837 | Rock | | 

**Remarks:**

---

**Signed:** Jesse Lunn  
**Date:** Dec. 19 1986
Date: Dec. 18 1986  Job No. 14-86  Hole No. 2  Elevation: 2707 ft.
Customer:  DRILNG LOG  830 AHUA STREET  HONOLULU, HAWAII 96818
         TELEPHONE (808) 839-6888  833-1444
  Location: Piticoma, Hilo

Driller:  Tracy Russell   8 Hrs.  Rig: 
Helper:   Brenda Russell  8 Hrs.  Gas: 
          8 Hrs.  Oil: 
Helper:   
Arv. Job:  _______  Lv. Job: _______  Hrs. _______
Or. No.    _____  _______

Bit-Size:  2 1/2 in.  Type: Star

Water Levels, Time:  M _______ ft., Time:  M _______ ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>Porous Rock</td>
<td>Make stem &amp; bit back up</td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>Big Hole</td>
<td>to jars and start drilling</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:  

Signed:  Tracy Russell  Date: Dec. 18 1986
Date: Dec. 17 1986  Job No: 14-86   Hole No: 2  Elevation: 272 ft.
Customer: PL: & HK    Location: Piikoiwa Hills

Driller: Tracy Kauweloa 8 Hrs.    Rig: 
Helper: Brian Kauweloa 9 Hrs.    Gas: 
Helper:  Hrs.    Oil: 

Bit-Size: 1/2"  Type: Star

Depth Start: ft., Depth Stop: ft., Feet Drilled: ____________________

Water Levels, Time: M. ft., Time: M. ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Finish assembling pump</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Replace casing string</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Restring casing line at 3/4 mast</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stand rig up, recenter rig</td>
</tr>
<tr>
<td></td>
<td></td>
<td>remake guide wire</td>
</tr>
</tbody>
</table>

Remarks: ________________________________

Signed: Tracy Kauweloa  Date: Dec 17 1986

Signed:  Date: Dec 17 1986
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

---

Date: Dec 16 1986
Job No.: 14-86
Hole No.: 2
Elevation: 2705 ft.

**Customer**: PIIKONOA, Hilo

**Driller**: Tracy Runnels
8 Hrs. Rig

**Helper**: Brett Runnels
8 Hrs. Gas

**Helper**: ___________
Hrs. Oil

**Arv. Job**: ___________
Lv. Job: ___________
Hrs. Repairs ___________
Or. No. ___________

---

**Bit-Size**: 20 in.
**Type**: Star

**Casing-Size**: ___________ in., Length in hole: ___________ ft. ___________ in., Amt. Perforated: ___________ ft. ___________ in.

**Depth Start**: ___________ ft., Depth Stop: ___________ ft., Feet Drilled: ___________ ft.

**Water Levels, Time**: ______ M ft., Time: ______ M ft.

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rebuild metal on slides. Install new pads and slide crown assembly back in rig.</td>
</tr>
</tbody>
</table>

---

**Remarks**: ________________________________

---

**Signed**: Tracy Runnels
**Date**: Dec 16 1986
Date: Dec. 15 1986
Job No.: 14-86
Hole No.: 2
Elevation: 276 ft.

Customer: DK & NR
Location: Pauoa, Hilo

Driller: Tracy Ruggles
8 Hrs. Rig
Helper: Brent Ruggles
8 Hrs. Gas
Helper

Arv. Job
Lv. Job
Hrs.
Hrs.

Arv. Job
Lv. Job
Hrs.
Hrs.

Bit-Size: 2 1/4"

Casing-Size
in., Length in hole
ft., Amt. Perforated
in., Amt.

Depth Start
ft., Depth Stop
ft., Feet Drilled

Water Levels, Time
M. ft., Time
M. ft.

Remarks:

Measurements

Depth
Formation
Remarks
Top

A
B

Signed: Tracy Ruggles
Date: Dec. 15 1986
Date: Dec. 12 1986  Job No.: 14-86  Hole No.: 2  Elevation: 2705 ft.
Customer: DL & NR  Location: Piihona, Hilo

Driller: Tracy Runnels  8 Hrs.  Rig: 
Helper: Brett Runnels  8 Hrs.  Gas: Oil:

Bit-Size: 2 1/2 in.  Type: Star
Depth Start: ft., Depth Stop: ft., Feet Drilled: 

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>83'</td>
<td>Broke through</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90'</td>
<td>Hard layer 86'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>86'-90'</td>
<td>Purple rock</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: __________________________________ 

Signed: Tracy Runnels  Date: Dec 12 1986
Date: Dec. 11, 1986  Job No. 14-86  Hole No. 2  Elevation: 270 ft.
Customer: DE NUR  Location: Pikoaua, Hi

<table>
<thead>
<tr>
<th>Driller</th>
<th>Tracy Lynne</th>
<th>8 Hrs.</th>
<th>Rig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Brent Kimmels</td>
<td>8 Hrs.</td>
<td>Gas</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oil</td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td></td>
<td>Repairs</td>
</tr>
<tr>
<td>Lv. Job</td>
<td></td>
<td></td>
<td>Or. No.</td>
</tr>
</tbody>
</table>

Bit-Size: 20”  Type: Star

Depth Start: ft., Depth Stop: ft., Feet Drilled: 

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>81</td>
<td>still caving</td>
<td>Poor Rope Socket</td>
<td></td>
</tr>
<tr>
<td>183</td>
<td>badly</td>
<td>Put jars back on</td>
<td></td>
</tr>
<tr>
<td></td>
<td>washing</td>
<td>cuttings away</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Signed: Tracy Lynne  Date: Dec. 11, 1986
Date: Dec 10 1986  Job No: 14-86  Hole No: 2  Elevation: 270 ft.

Customer: DLIR  Location: Alihonoa, Hi

Driller: Tracy Runnels  8 Hrs. Rig:  
Helper:  
  8 Hrs.  Gas:  
  Hrs.  Repairs:  
Arv. Job:  
  Lv. Job:  
  Hrs:  

Bit Size: 20"  Type: Star

Depth Start: ft., Depth Stop: ft., Feet Drilled:  
Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>Caving Hole</td>
<td>Water still 75'</td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>Hard on Bottom</td>
<td>Washing Bentonite away</td>
<td>Bit taking a beating</td>
</tr>
</tbody>
</table>

Remarks:

Signed: Tracy Runnels  Date: Dec 10 1986
**DRILLING LOG**

**RUSCOE MOSS COMPANY**
830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

---

<table>
<thead>
<tr>
<th>Date</th>
<th>Dec 9, 1986</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job No.</td>
<td>14-86</td>
</tr>
<tr>
<td>Hole No.</td>
<td>2</td>
</tr>
<tr>
<td>Elevation (ft.)</td>
<td>270+</td>
</tr>
</tbody>
</table>

---

### Customer

**PL + WR**

---

### Location

Piikuna, Hilo

---

### Driller

Tracy Runnels

---

### Helper

Brent Runnels

---

### Hours

- Rig
- Gas
- Oil
- Repairs

---

### Arrival (Arv.) and Leaving (Lv.) Job

---

### Bit-Size

20"

---

### Type

Star

---

### Casing-Size

in., Length in hole

---

### Amt. Perforated

ft. in.

---

### Depth Start

ft., Depth Stop

---

### Feet Drilled

---

### Water Levels, Time

- M ft., Time

---

### Measurements

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>75'</td>
<td>Loose Pouros</td>
<td>Water standing about</td>
</tr>
<tr>
<td>180'</td>
<td>Black Rock</td>
<td>75' at end of day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>caving</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pick up freight at Y.B. Docks</td>
</tr>
</tbody>
</table>

---

### Remarks

---

Signed: Tracy Runnels

Date: Dec 9, 1986
Date: Dec 8, 1986  
Job No.: 14-86  
Hole No.: 2  
Elevation: 2705 ft.

Customer:  
Location: Piihona Hill

Driller: Tracy Runnels  
Hrs.: 8

Helper: Ben Runnels  
Hrs.: 8

Arv. Job:  
Lv. Job:  
Hrs.:  
Or. No.:  
Repairs:  

Bit-Size: 20"  
Type: STAR


Depth Start: ft., Depth Stop: ft., Feet Drilled:

Water Levels, Time M ft, Time M ft.

Remarks: Logging water at end  
Loose chucks 75' of days

Signed: Tracy Runnels  
Date: Dec 8, 1986
Date: Dec. 5 1986  Job No.: 14-86  Hole No.: 2  Elevation: 270 ft.
Customer: PL & NR  Location: Ewa, Oahu

Driller: Tracy Runnels  8 Hrs.  Rig: 
Helper: Brent Runnels  8 Hrs.  Gas: 
Helper:  8 Hrs.  Oil: 

Bit-Size: 20"  Type: Star
Depth Start: ft., Depth Stop: ft., Feet Drilled: 

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>51/61</td>
<td>Powas Rock</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Signed: Tracy Runnels  Date: Dec. 5 1986
### Drilling Log

**Company:** Ruscoe Moss Company

**Address:** 830 Ahua Street • Honolulu, Hawaii 96819

**Telephone:** (808) 833-1444

**Date:** Dec 4, 1986

**Job No.:** 14-86

**Hole No.:** 2

**Elevation:** 2705 ft.

**Customer:** DL & NR

**Location:** Lilikoi K16

---

<table>
<thead>
<tr>
<th>Driller</th>
<th>Tracy Runnels</th>
<th>Hrs.</th>
<th>Rig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Brent Runnels</td>
<td>Hrs.</td>
<td>Gas</td>
</tr>
</tbody>
</table>

**Arrival Job:**

**Leaves Job:**

**Hours:**

**Or. No.:**

---

**Bit-Size:** 20"

**Type:** STAR

**Casing-Size:**

**Length in hole:**

**Amt. Perforated:**

**Depth Start:**

**Depth Stop:**

**Feet Drilled:**

---

**Water Levels:**

**Time M:**

**Time M:**

---

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>53</td>
<td>Lava</td>
<td>Shoulders of bit</td>
<td></td>
</tr>
<tr>
<td>157</td>
<td>brown clay</td>
<td>still grabbing behind</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

---

**Signed:** Tracy Runnels

**Date:** Dec 4, 1986
<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>52/53</td>
<td>Hard Blue Rock</td>
<td>Shoulders on bit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cleaning hole up behind</td>
</tr>
<tr>
<td></td>
<td></td>
<td>well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Slip 14&quot; spider &amp; slips to Honolulu</td>
</tr>
</tbody>
</table>

Signed: Tracy Runnels  Date: Dec. 3, 1986
Date: Dec 2 1986  
Job No: 14-86  
Hole No: 2  
Elevation: 270 ft

Customer: A & NR  
Location: Honolulu, Hi

Driller: Tracy Runnels  
Hrs: 8  
Rig:  

Helper: Brett Runnels  
Hrs: 8  
Gas:  
Oil:  

Arv. Job:  
Hr. Repairs:  

Bit-Size: 20"  
Type: Star  

Casing-Size: in., Length in hole: ft.  
Amt. Perforated: in.  

Depth Start: ft., Depth Stop: ft., Feet Drilled:  

Water Levels, Time: M ft., Time: M ft.  

Depth | Formation | Remarks | Measurements
--- | --- | --- | ---
52 | Renew hole to straighten | Change 20" bit in afternoon one on ground finished | A | B

Remarks: __________________________________________

Signed: Tracy Runnels  
Date: Dec 2 1986
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-8888 • 833-1444

---

**Date:** Dec 1 1986  
**Job No./Z:** 14-86  
**Hole No.:** 2  
**Elevation:** 270 ft.  
**Location:** Pihoia, Hi

**Driller:** Tracy Runnels  
**Hrs.:** 8  
**Rig:**  
**Gas:**  
**Oil:**

**Helper:** Brent Runnels  
**Hrs.:** 8  
**Repairs:**  

**Bit Size:** 20"  
**Type:** Star

**Casing Size:** in., Length in hole ft., Amt. Perforated ft. in.

**Depth Start:** ft., Depth Stop ft., Feet Drilled

**Water Levels, Time:** M ft., Time M ft.

---

**Depth** | **Formation** | **Remarks** | **Top**
---|---|---|---
52 | Ream hole to straighten | Take 24" bit off, put 20" bit on | 
 |  | Work on other 20" bit on ground | 

**Remarks:**

---

**Signed:** Tracy Runnels  
**Date:** Dec 1 1986
**DRILLING LOG**

**RUSCOE MOSS COMPANY**

830 AHUA STREET · HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6888 · 833-1444

---

**Date:** Nov. 28, 1986

**Job No.:** 14-86

**Hole No.:** 2

**Elevation:** 270 ft.

**Location:** Piikoi, Hilo

---

**Driller:** Tracy Runnels

**Hrs.:** 2

**Rig:**

**Helper:** Bruce Runnels

**Hrs.:** 8

**Gas:**

**Oil:**

**Arv. Job:**

**Lv. Job:**

**Hrs.:**

**Repairs:**

---

**Bit-Size:** 24"

**Type:** Star

---

**Casing-Size:**

**in., Length in hole:**

**ft., in., Amt. Perforated:**

---

**Depth Start:**

**ft., Depth Stop:**

**ft., Feet Drilled:**

---

**Water Levels, Time:**

**M ft., Time:**

**M ft.,**

---

**Depth**

**Formation**

**Remarks**

**Top**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>Hard Blue Rock</td>
<td>Take side boards off</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Lots of gravel</td>
<td>Ford 20&quot; bit up, made to welder, make spinning sling + start building up bit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hole had in bottom about 3&quot; of plumb</td>
<td></td>
</tr>
</tbody>
</table>

---

**Remarks:**

---

**Signed:** Tracy Runnels

**Date:** Nov. 28, 1986

---
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** Nov 26 1986  
**Job No.:** 17-86  
**Hole No.:** 2  
**Elevation:** 210 ft.

**Customer:** DL+MR  
**Location:** Piikoiwa, Hilo

**Driller:** Tracy Runnels  
**Helper:** Bacht Runnels

**Rig:**  
**Gas:**  
**Oil:**

**Hrs.**  
**Hrs.**  
**Hrs.**

**Arv. Job:**  
**Lv. Job:**  
**Or. No.:**

**Hrs.**

---

**Bit-Size:** 24"  
**Type:** STAR

**Casing-Size:** in., Length in hole ft. in., Amt. Perforated ft. in.

**Depth Start:** ft., Depth Stop ft., Feet Drilled

**Water Levels, Time M ft., Time M ft.**

---

**Depth**  
**Formation**  
**Remarks**  
**Top**  

A  
B

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>Hard Blue Rock</td>
<td>Finish uploading gravel</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
<td>Retaining spring for high speed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>clock hole adjusting ring</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>came loose repaired temporarily</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

---

**Signed:** Tracy Runnels  
**Date:** Nov 26 1986
**DRILLING LOG**

Date: Nov 25 1986

Job No.: 14-86

Hole No.: 2

Elevation: 2707 ft.

Customer: DLF NR

Location: Pilkawa, Hilo

Driller: Tracy Arnsby

Rig: ____________

Rig: ____________

Gas: ____________

Oil: ____________

Helper: Brent Arnsby

Hrs.: ____________

Hrs.: ____________

Hrs.: ____________

Arv. Job: ____________

Lv. Job: ____________

Hrs.: ____________

Or. No.: ____________

Bit-Size: 24 1/2

Type: Star

Casing-Size: ____________ in., Length in hole: ____________ ft.


in.

Depth Start: ____________ ft., Depth Stop: ____________ ft., Feet Drilled: ____________

Water Levels, Time: ____________ M. ft., Time: ____________ M. ft.

**Depth**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Hard Blue Rock</td>
<td>Pickup load of gravel on Ford F150, added side boards in AM, also pickup barrel of diesel fuel, Brent gravel packed driveway</td>
</tr>
</tbody>
</table>

**Remarks:**

Signed: Tracy Arnsby

Date: Nov 25 1986
DRILLING LOG

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6688 • 833-1444

Date: Nov 27, 1986  Job No. 14-86  Hole No. 2  Elevation 270 ft.

Customer: DL & WR  Location: Pidhoir, HI

Driller: Tracy Runnels  Helper: Brent Runnels

8 Hrs.  8 Hrs.  8 Hrs.  8 Hrs.

Or. No.

Bit-Size: 24"  Type: Star


Depth Start: ________ ft., Depth Stop: ________ ft., Feet Drilled: ________ ft.


<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>Ream 40-46&quot;</td>
<td>Weld reamers on shoulders of 6t</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>sharpin log of reamers 4 times</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Melt ropesocket mandrel in fire</td>
<td></td>
</tr>
</tbody>
</table>

Remarks:

Signed: Tracy Runnels  Date: Nov 27, 1986
Date: Nov 21 1986  
Job No.: 14-86  
Hole No.: 2  
Elevation: 2705 ft.

Customer: DL+VR  
Location: Pihonua, Hi

Driller: Tracy Runnels  
Hrs.: 8  
Rig:

Helper: Brent Runnels  
Hrs.: 8  
Gas:  
Oil:

Arv. Job:  
Lv. Job:  
Hrs.:  
Repairs:  
Or. No.:  

Bit-Size: 2  
Type: Star

Casing-Size: in., Length in hole: ft.  
Amt. Perforated: ft. in.

Depth Start: ft., Depth Stop: ft., Feet Drilled:

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pick up Clutch dogs + springs at Hawaiian Air Freight 3 AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1st fl. 2 new dogs + rollers in Spooling Clutch 28L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drive 24&quot; conductor pipe to 18 below ground</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Broke belt idler spring in rig heat and bend new back on end</td>
</tr>
</tbody>
</table>

Signed: Tracy Runnels  
Date: Nov 21 1986
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-6888 • 833-1444

Date Nov. 20 1986 Job No. 14-86 Hole No. 2  Elevation 270 ft.

Customer DL & NR  Location Pāhindua, Hilo

Driller Tracy Runnells  9 Hrs. Rig  
Helper Brent Runnells  8 Hrs. Gas  Oil

Helper  Hrs. Repairs

Bit-Size 2 1/2"  Type Star

Casing-Size in., Length in hole ft. in., Amt. Perforated ft. in.

Depth Start ft., Depth Stop ft., Feet Drilled

Water Levels, Time M ft., Time M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formations</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Repaired</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Install speed clutch arm on rig. Broke 1 dog in speed clutch.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exchanged after running only at start while tear clutch down.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Service other clutches.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check Hawaiian Air for parts.</td>
</tr>
</tbody>
</table>

Signed Tracy Runnells  Date Nov. 20 1986

---

Remarks: _____________________________ _
### Drilling Log

**Date:** Nov 19, 1986  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 200 ft.  
**Location:** Pahuua, HI

**Driller:** Tracy Ronne  
**Helper:** Brad Ronne  
**Arv. Job:**  
**Lv. Job:**  
**Hrs.** 8

**Bit-Size:** 2  
**Type:** Stav

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>38'</td>
<td>38-40' loose rocks</td>
<td>Water still cascading</td>
</tr>
<tr>
<td>46'</td>
<td>40-46' (Hard rock)</td>
<td>Fractured from about 25' to about 340'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Broke, spudding arm at end of day, pullout of rig</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Take to welding shop for repair</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Make up jars &amp; pour rope sacrifice</td>
</tr>
</tbody>
</table>

**Customer:** D-L Air  
**Location:** Pahuua, HI

**Driller's Signature:**  
**Date:** Nov 19, 1986
## Drilling Log

**Date:** Nov 18 1986  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 2700 ft.

**Customer:** DL+4R

### Driller
- Tracy Kupake  
  - Hrs.: 9
  - Rig:

### Helper
- Bert Kupake  
  - Hrs.: 8
  - Gas:
  - Oil:

### Vehicle
- Repairs:

### Arrival
- Arv. Job:
  - Hrs.:
  - Or. No.:

### Location
- Location: Pukapua Hwy

### Equipment
- Bit-Size: 2 1/4"
- Type: Star
- Depth Start: ft., Depth Stop: ft., Feet Drilled: ________________
- Water Levels, Time: __________ M ft., Time: __________ M ft.

### Measurements

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
<th>Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>Hard Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>Porous loose rocks</td>
<td>at 38'</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Top Water draining</td>
<td>to 38' at end of day</td>
<td></td>
</tr>
</tbody>
</table>

### Remarks:

- _______________________________________________________

**Signed:** Tracy Kupake  
**Date:** Nov 18 1986
**DRILLING LOG**

830 AHUA STREET • HONOLULU, HAWAII 96819
TELEPHONE (808) 839-8888 • 833-1444

**Date** Nov 17 1986  **Job No.** 14-86  **Hole No.** 2  **Elevation** 270 ft.
**Customer** DL + NK
**Location** Piihonua, Hilo

<table>
<thead>
<tr>
<th>Driller</th>
<th>Tracy Runnels</th>
<th>8 Hrs. Rig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>Brent Runnels</td>
<td>8 Hrs. Gas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oil</td>
</tr>
<tr>
<td>Helper</td>
<td></td>
<td>Hrs. Repairs</td>
</tr>
<tr>
<td>Arv. Job</td>
<td></td>
<td>Hrs.</td>
</tr>
<tr>
<td>Lv. Job</td>
<td></td>
<td>Or. No.</td>
</tr>
</tbody>
</table>

**Bit-Size** 24"  **Type** Star

**Casing-Size** in., **Length in hole** ft. in. **Amt. Perforated** ft. in.
**Depth Start** ft., **Depth Stop** ft., **Feet Drilled** ______________

**Water Levels, Time** M ft., **Time** M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Hard Rock</td>
<td>Hole getting tight</td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>Well 5 more 24&quot; conductor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 1/2&quot; casing under min and drive to 15' below ground</td>
</tr>
</tbody>
</table>

**Remarks:** ____________________________

**Signed** Tracy Runnels  **Date** Nov 17 1986
Date: Nov. 14 1986  Job No.: 14-86  Hole No.: 2  Elevation: 270 ft.

Customer: DL&N  Location: Piikoi, HI

Driller: Tracy Runnels  8 Hrs.  Rig: 
Helper: Brent Runnels  8 Hrs.  Gas:  Oil: 


Bit-Size: 3 1/4"  Type: Star


Depth Start: ft., Depth Stop: ft., Feet Drilled: 

Water Levels, Time: M ft., Time: M ft.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Large Boulders (Weld 5 more ft. 24&quot; conductor)</td>
<td>(water standing in hole, approx 10 ft. below ground)</td>
</tr>
<tr>
<td>25</td>
<td>Porous</td>
<td>Build deck, take stem guide</td>
</tr>
</tbody>
</table>

Make 1" steel evis for John Hole, Anahoku Pump Job
Load John Ford + Welder

Signed: Tracy Runnels  Date: Nov 14 1986
Date Nov 13 1986 Job No. 14-86 Hole No. 2 Elevation 270 ft.

Customer DL+MR Location Piiholo, Hilo

Driller Tracy Runnels Hrs. Rig 8
Helper Brent Runnels Hrs. Gas 8

Helper Hrs. Repairs


Bit-Size 2 1/4 Type Starv


Depth Start _____ ft., Depth Stop _____ ft., Feet Drilled

Water Levels, Time M _____ ft., Time M _____ ft.

Remarks: Move Stem guide down and slide in dog house

Signed Tracy Runnels Date Nov 13 1986
### DRILLING LOG

**RUSCOE MOSS COMPANY**

830 AHU STREET • HONOLULU, HAWAII 96819

TELEPHONE (808) 839-6888 • 833-1444

---

**Date:** NOV 12 1986  
**Job No.:** 14-86  
**Location:** Honolulu, HI  
**Elevation:** 270 ft.

**Driller:** Tracy Runnels  
**Helper:** Bright Runnels

**Hrs.**  
Rig: 8  
Gas: 8  
Oil:  
Repairs:  
Or. No.:  

---

**Bit-Size:** 2 4  
**Type:** Star

**Formation:**  
**Remarks:**  
**Top:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Formation</th>
<th>Remarks</th>
</tr>
</thead>
</table>
| 85    | Loose Rocks | Drive casing to 10 ft.  
| 15    | (Fill)     | Kick casing (24") up and down many times, undermine to plumb |

---

**Remarks:**  

---

**Signed:** Tracy Runnels  
**Date:** Nov 12 1986
### DRILLING LOG

**Date:** Nov 10, 1986  
**Job No.:** 14-86  
**Hole No.:** 2  
**Elevation:** 270 ft.

**Customer:** PLNR  
**Location:** HI-LO

**Driller:** Tracy Runnels  
**Helper:** Breck Runnels

<table>
<thead>
<tr>
<th>Rig Type</th>
<th>Gas</th>
<th>Oil</th>
</tr>
</thead>
</table>

**Arv. Job**  
**Lv. Job**  
**Hrs. Repairs**

<table>
<thead>
<tr>
<th>Bit Size</th>
<th>24&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Star</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Casing Size</th>
<th>in.</th>
<th>ft.</th>
<th>Length in hole</th>
<th>ft.</th>
<th>in.</th>
<th>Amt. Perforated</th>
<th>ft.</th>
<th>in.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth Start</th>
<th>ft.</th>
<th>Depth Stop</th>
<th>ft.</th>
<th>Feet Drilled</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water Levels</th>
<th>Time M ft.</th>
<th>Time M ft.</th>
</tr>
</thead>
</table>

**Remarks:**
- Fly Hono - Hilo
- Pay Rent on Appt. Day Lum Inc.
- Build Dog House
- Plum Big (28-)
- Cut 5 piece 24" conductor pipe
- Put up stem guide
- Drill 57 ft. and drive casing set

**Signed**  
**Date:** Nov 10, 1986